Inspection and Maintenance Review Committee

Low Pressure Evaporative Test Implementation Issues

Sylvia Morrow

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Overview

- Test Background
- Commitment
- Technical Issues
- Findings
- Next Steps

Test Background

- Included in U.S. EPA's enhanced smog check performance standard.
- Identifies leak in evaporative emission control system.
- Applicable to 1976-1995 model-year vehicles.

Commitment

- Low pressure evaporative test implementation is the **only** outstanding commitment.
- Failure to implement jeopardizes $2.5 billion in transportation funding due to conformity.
- Potential litigation for failure to implement.

Technical Issues

- ✓ Understanding false failure rate.
- ✓ Developing tester technology accurate for California.
- ✓ Understanding repairs and associated emission benefits.
- ✓ Gauging the portion of the fleet that can be tested.
- ✓ Addressing equipment costs.

Remedy of False Failure Rate Issue

- H & SC Section 44013(c) requires a false failure rate less than 5%.
- 2002 prototype tests showed a false failure rate in excess of 5%.
- ARB tested 23 vehicles in 2005.
- Test results showed a 0% false failure rate.

Tester Technology Accurate for California

- Early low pressure evaporative testers did not compensate for fuel temperature, fuel volatility and tank volume variables.
- Tester would allow for false passes.
- BAR worked with manufacturers to develop tester that compensated for these variables.

Evaporative Failures Can Be Repaired

- ARB and BAR needed to understand repairs and emission benefits to determine cost effectiveness.
- In 2002 and 2005, ARB repaired 33 vehicles with identified evaporative emission defects.
- Majority of repairs associated with hoses, fuel tanks, filler necks, and fuel sending unit.
- Average repair cost is approximately $160.

Evaporative Repair Emission Benefits are Significant

- In 2002, ARB conducted pre- and post-repair diurnal emission tests on 10 vehicles.
- In 2005, ARB conducted pre- and post-repair diurnal and hot soak emission tests on 3 vehicles.
- U.S. EPA Study included pre-and post-repair diurnal, hot soak, and running loss emission tests on 11 vehicles.
- Emission reductions in 2010 are 14 tpd ROG.
- Reduces toxics exposure.

Over 90% of Applicable Fleet Can Be Tested

- Testable fleet varied between 3 states who implemented test, 60%, 50%, and 18%.
- In 2005, BAR conducted roadside tests on over 1500 vehicles to evaluate testability.
- 91.8% of the model-year 76-95 fleet can be tested under optimum conditions.

Equipment and Consumer Costs are Manageable

Equipment

- Equipment costs range from $2500-$3000.
- $100 annual maintenance cost.
- Stations will likely amortize costs over 5 years: $600-$700 annually.

Consumer Costs

- Increases test cost by approximately $7.50.
- Saves $4.5 million in fuel costs annually.

Findings

- False failure rate less than 5%.
- Equipment compensates for variables.
- Average repairs costs are $160/repair.
- 2010 emission reductions are 14 tpd ROG.
- 91.8% of the 76-95 fleet can be tested.
- Equipment costs $2500-$3000.
- Cost effectiveness is $6700/ton ROG.

Next Steps

- BAR conducts regulatory process.
- Manufacturers produce and certify low pressure evaporative testers.
- Stations implement the low pressure evaporative test.

Contact Information

Sylvia Morrow

Email: smorrow@arb.ca.gov

Phone: 916-324-7163